



BIOLOGY

BOOKS - CHETANA BIOLOGY (MARATHI ENGLISH)

Life Processes In Living Organisms Part-1

Exercise

1. Which of the following protein is present in skin?

A. Haemoglobin

B. Insulin

C. Keratin

D. Ossein

Answer:



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2. Which one of the following vitamin is not fat soluble?

A. D

B. K

C. A

D. C

Answer:



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3. Water content of Blood Plasma is _____.

A. 0.7

B. 0.9

C. 0.65

D. 0.5

Answer:



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4. In which stage the nuclear membrane completely disappears during nuclear division?

A. Prophase

B. Metaphase

C. Anaphase

D. Telophase

Answer:



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5. Number of chromosomes in diploid cell

_____.

A. n

B. $3n$

C. $\frac{n}{2}$

D. $2n$

Answer:



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6. In which type of cells meiosis occurs?

- A. Germ cells
- B. Stem cells
- C. Somatic cells
- D. Epithelial cell

Answer:



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7. Which vitamin is called riboflavin?

A. A

B. B_5

C. B_2

D. C

Answer:



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8. In which part of cell, electron transfer chain reaction occurs?

A. Cytoplasm

B. Mitochondria

C. Nucleus

D. Golgi body

Answer:



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9. Which of the following vitamin are required for the production of $FADH_2$ and $NADH_2$?

A. Vitamin E

B. Nicotinamide

C. Vitamin C

D. Vitamin D

Answer:



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10. The protein ossein is produced in _____.

A. blood

B. muscles

C. bone

D. pancreas

Answer:



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11. The Spindle fibres start appearing from _____ stage of Karyokinesis.

A. Prophase

B. Metaphase

C. Anaphase

D. Telophase

Answer:



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12. In case of plants, which of the following is not present during cytokinesis?

A. Spindle fibres

B. Cell Plate

C. Chromosomes

D. Nucleolus

Answer:



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13. Process of glycolysis occurs in _____.

A. Mitochondria

B. Endoplasmic reticulum

C. Cytoplasm

D. Golgi body

Answer:



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14. The reactions of the TCA cycle occur in..... .

A. Mitochondria

B. Cytoplasm

C. Nuclens

D. Vacuole

Answer:



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15. During exercise, _____ accumulates in the muscles due to which we feel tired.

A. citric acid

B. acetic acid

C. glucose

D. lactic acid

Answer:



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16. Proteins are the macromolecules formed by bonding together many _____.

A. fatty acids

B. sugars

C. amino acids

D. nucleotides

Answer:



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17. Excess protein are converted into glucose by the process of _____.

A. deamination

B. glycolysis

C. gluconeogenesis

D. translocation

Answer:



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18. An enzyme _____ present in the plant chloroplasts is most abundant protein found in nature.

A. Lipase

B. RuBisCo

C. Protease

D. Auxin

Answer:



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19. _____ are required to form the covering around the axons of nerve cells.

A. fatty acids

B. Amino acids

C. Lactic acid

D. Alcohols

Answer:



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20. In which stage the nuclear membrane completely disappears during nuclear division?

A. Prophase

B. Metaphase

C. Anaphase

D. Telophase

Answer:



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21. Chromosomes complete their condensation and become clearly visible along with their sister chromatids during _____.

A. Prophase

B. Metaphase

C. Anaphase

D. Telophase

Answer:



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22. The chromosomes reach opposite poles of the cell and start to decondense during _____.

A. Prophase

B. Metaphase

C. Anaphase

D. Telophase

Answer:



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23. In _____, recombination / crossing over occurs between homologous chromosomes.

A. Mitosis

B. Meiosis-I

C. Meiosis-II

D. Cytokinesis

Answer:



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24. Which of the following is a protein present in bones?

A. Myosin

B. Melanin

C. Actin

D. Ossein

Answer:



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25. Cell plate formation occurs during

A. Karyokinesis in animal cells

B. Cytokinesis in plant cells

C. Karyokinesis in plant cells

D. Cytokinesis in animals cells

Answer:



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26. We get _____ energy from carbohydrates.

A. 9 Kcal/gm

B. 4 Kcal/gm

C. 6 Kcal/gm

D. 8 Kcal/gm

Answer:



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27. After complete oxidation of a glucose molecule, _____ number of ATP molecules are formed.

A. 2

B. 48

C. 38

D. 3

Answer:



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28. At the end of glycolysis, _____ molecules are obtained.

A. amino acid

B. fatty acid

C. Pyruvic acid

D. carbonic acid

Answer:



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29. Genetic recombination occurs in _____
phase of prophase of meiosis I.

A. Zygotene

B. Pachytene

C. division

D. separation

Answer:



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30. All chromosomes are arranged parallel to equatorial plane of cell in ___ phase of mitosis.

A. Anaphase

B. meta phase

C. Prophase

D. Telophase

Answer:



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31. For formation of plasma membrane, _____
molecules are necessary.

A. fats

B. oils

C. Phospholipids

D. waxes

Answer:



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32. Our muscles cells perform ___ type of respiration during exercise.

A. aerobic

B. anaerobic

C. cellular

D. molecular

Answer:



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33. Complete the correction :

Carbohydrates : 4 Kcal of energy : : Lipids :

_____.

A. Glycolysis :: EMP Pathway : : Tricarboxylic

acid cycle : _____.

B.

C.

D.

Answer:



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34. Glycolysis :: EMP Pathway : : Tricarboxylic acid cycle : _____.



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35. $NADH_2$: 2 molecules of ATP : : $FADH_2$



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36. $NADH_2$: Nicotinamide Adenine

Dionucleotide : : $FADH_2$: _____



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37. Glycolysis : Cytoplasm : : Tricarboxylic acid cycle : _____.



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38. Fats : Fatty acids : : Proteins : _____.



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39. Vitamins A,D,E,K : Fat-soluble : : Vitamins B and C : _____.



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40. In which type of cells meiosis occurs?



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41. Nuclear division : karyokinesis : :
Cytoplasmic division : _____.



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42. Blood : Haemoglobin :: Bones : _____.



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43. Which vitamin is called riboflavin?



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44. Fermentation of yeast : Alcohol : :

Fermentation of erythrocytes: _____.



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45. State whether the following statements and True or False. Correct the false statements:

Only food stuff is sufficient for energy production.



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46. State whether the following statements and True or False. Correct the false statements:

Process of glycolysis occurs in cytoplasm.



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47. State whether the following statements and True or False. Correct the false statements:

Amino acids are obtained after digestion of proteins.



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48. State whether the following statements and True or False. Correct the false statements:

Meiosis occurs in somatic cells and stem cells of the body.



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49. State whether the following statements and True or False. Correct the false statements:

Nucleolus does not appear in each daughter nucleus.



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50. State whether the following statements and True or False. Correct the false statements:

Meiosis II is just like mitosis.



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51. State whether the following statements and True or False. Correct the false statements:

We get 9Kcal of energy per gram of carbohydrates.



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52. State whether the following statements and True or False. Correct the false statements:

Tricarboxylic acid cycle (Kreb's cycle) occurs in mitochondria.



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53. State whether the following statements and True or False. Correct the false

statements:

Glycolysis is also called kreb's cycle.



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54. State whether the following statements and True or False. Correct the false statements:

During anaerobic respiration of muscles, citric acid accumulates in the muscles due to which we feel tired.



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55. State whether the following statements and True or False. Correct the false statements:

Glucose is incompletely oxidised in anaerobic respiration.



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56. State whether the following statements and True or False. Correct the false statements:

Proteins of plant origin are called as first class proteins.



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57. State whether the following statements and True or False. Correct the false statements:

Excess of amino acids obtained from proteins are not stored in the body.



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58. State whether the following statements and True or False. Correct the false statements:

We get 9Kcal of energy per gram of carbohydrates.



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59. State whether the following statements and True or False. Correct the false statements:

Each cell contains 50% water by weight.



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60. State whether the following statements and True or False. Correct the false statements:

Blood plasma contains 90% of water.



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61. State whether the following statements and True or False. Correct the false

statements:

Vitamins B and C are water - soluble vitamins.



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62. State whether the following statements and True or False. Correct the false statements:

We can digest fibres.



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63. State whether the following statements and True or False. Correct the false statements:

2 molecules of ATP are obtained from each $FADH_2$ molecule.



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64. State whether the following statements and True or False. Correct the false statements:

Before cell division, the cell doubles up its chromosome number.



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65. State whether the following statements and True or False. Correct the false statements:

All chromosomes are arranged parallel to the equatorial plane of the cell in anaphase.



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66. State whether the following statements are True or False. Correct the false statements:

Condensation of thin thread - like chromosomes starts in telophase.



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67. State whether the following statements are True or False. Correct the false statements:

Sister chromatids are pulled apart in metaphase.



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68. State whether the following statements are True or False. Correct the false statements:

Plant cell divides by formation of a notch at the equatorial plane of the cell.



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69. Organ systems performing their functions in human body



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70. Main sources of energy needed to perform organ systems.



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71. Two methods of cellular respiration





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72. Enzymes formed in the cells and used in cellular respiration.



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73. Three scientists who discovered process of glycolysis.



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74. Scientist who discovered cyclical reaction of TCA cycle.



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75. Two steps of anaerobic respiration



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76. Process through which excess of proteins are converted into other useful substances like glucose



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77. Six types of vitamins



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78. Fat soluble vitamins



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79. Vitamins A,D,E,K : Fat-soluble : : Vitamins B and C : _____.



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80. Two types of cell division



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81. Two steps of Mitosis



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82. Four steps of Karyokinesis



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83. Two steps of Meiosis



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84. An enzyme _____ present in the plant chloroplasts is most abundant protein found

in nature.



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85. Energy currency of the cell



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86. The chromosomes reach opposite poles of the cell and start to decondense during _____.



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87. Which of the following protein is present in skin?



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88. Myosin Protein found in



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89. Write the full form of: FAD



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90. Write the full form of: FMN



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91. Write the full form of: NADP



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92. Write the full form of: TCA cycle



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93. Write the full form of: *NADH₂*



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94. Write the full form of: *FADH₂*



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95. Write the full form of: *EMP pathway*



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96. Write the full form of: ATP



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97. Write the full form of: RuBisCo



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98. Define the following: Nutriton



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99. Define the following: Nutrients



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100. Define the following: Proteins



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101. Define the following: Cellular respiration



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102. Define the following: Aerobic respiration



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103. Define the following: Glycolysis



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104. Define the following: Fermentation



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105. Define the following: Lipids



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106. Define the following: Homologous
Chromosomes



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107. Define the following: Vitamins



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108. Define the following: Anaerobic Respiration



[Watch Video Solution](#)

109. Define the following: Coenzyme



[Watch Video Solution](#)

110. Define the following: Gluconeogenesis



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111. How many atoms of C,H and O are respectively present in a molecule of glucose?



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112. Which types of chemical bonds are present between all atoms in a molecule of

glucose?



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113. Complete the correction :

Carbohydrates : 4 Kcal of energy : : Lipids :

-----.



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114. What do you mean by diploid cell?



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115. What do you mean by haploid cell?



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116. Which type of cellular respiration performs complete oxidation of glucose?



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117. Which cell organelle is necessary for complete oxidation of glucose?



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118. What is the importance of balanced diet for our body?



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119. What is the importance of digestive juices in the digestive system?



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120. What is the role of circulatory system in energy production?



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121. What happens to the cells of injured tissue?



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122. What is the source of proteins ? What are they made up of?



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123. Whether new cells are formed during healing of wound?



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124. Which system is in action for removal of waste materials produced in human body.



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125. How the individual of a species is formed from existing one of same species?



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126. Whether the gametes are diploid or haploid? Why?



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127. Process by which four haploid cells are formed from one diploid cell.



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128. What is the importance of haploid cells?



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129. From where do we obtain lipids?



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130. Explain the following in details:

Adenosine triphosphate (ATP)



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131. Explain the following in details:

Proteins



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132. Explain the following in details:

Vitamins



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133. Distinguish between

Glycolysis and TCA cycle



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134. Distinguish between

Mitosis and Meiosis



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135. Distinguish between

Aerobic and Anaerobic respiration



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136. Distinguish between

Telophase and Prophase



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137. Give scientific reasons:

Oxygen is necessary for complete oxidation of glucose.



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138. Fibers are one of the important nutrients.



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139. Cell division is one of the important properties of cells and organisms.



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140. Sometimes, higher plants and animals too perform anaerobic respiration.



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141. Krebs's cycle is also known as citric acid cycle.



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142. State whether the following statements and True or False. Correct the false statements:

During anaerobic respiration of muscles, citric

acid accumulates in the muscles due to which we feel tired.



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143. Water is an essential nutrient.



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144. Many times, we experience dryness in mouth.



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145. Oral rehydration solution (salt-sugar-water) is frequently given to a person experiencing loose motions.



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146. We sweat during summer and heavy exercise.



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147. Many times, you cannot eat hot food due to inflammation / ulceration in mouth.



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148. Some persons experience difficulty in night vision since their childhood or adolescence.



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149. What would happen if :

Soil with seeds is submerged under water during germination.



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150. There is insufficient amount of carbohydrates in body due to exceptional conditions like fasting and hunger.



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151. Draw a neat labelled diagram of:

Human respiratory system.



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152. Draw a neat labelled diagram of:

Mitochondria and Tri-carboxylic acid cycle.



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153. Answer the following:

Explain glycolysis in detail.



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154. How are the various processes occurring in the human body controlled? In how many ways?



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155. In terms of chemistry what happens actually, when a molecule is oxidized?



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156. Do the plants get injured when do we pluck the flowers? How are those wounds healed?



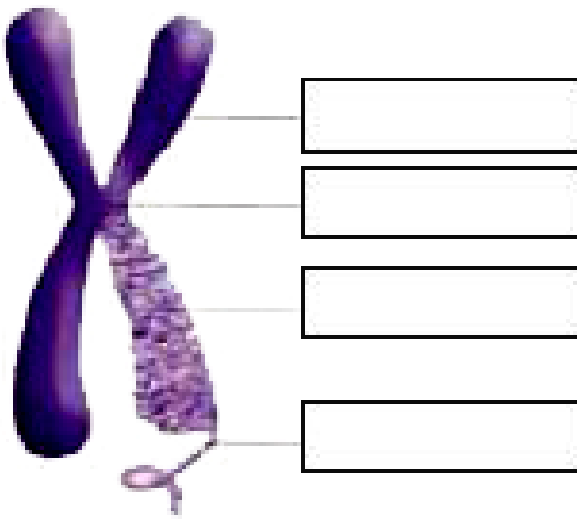
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157. How does the growth of any living organism occur? Does the number of cells in their body increase? If yes, how?



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158. What is the shape of chromosome? Give its names in the figure.



2.5 Chromosome



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159. What is respiration? How does it occur?



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160. How are the food stuffs and their nutrient contents useful for body?



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161. Which different functions are performed by muscles in body?



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162. Why may the players be seen consuming these food stuffs?



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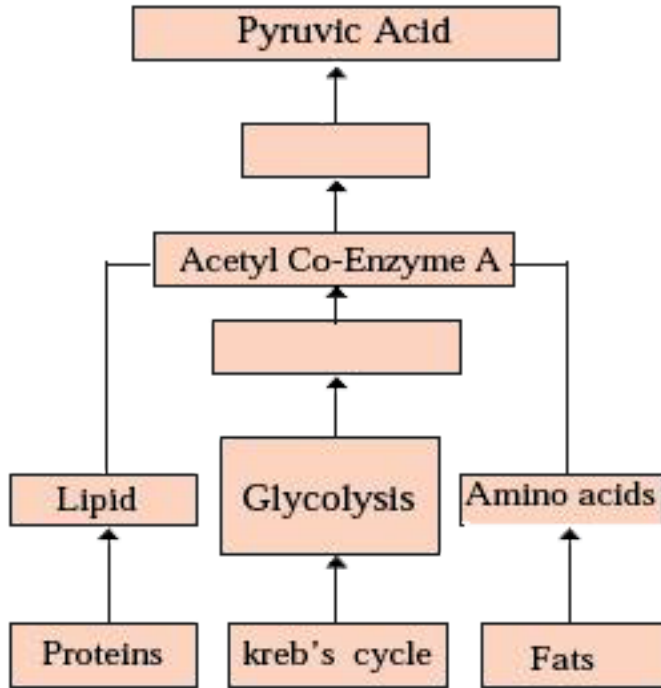
163. Anaerobic respiration in living organisms/
cells



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164. How energy is formed from oxidation of
carbohydrates, fats and proteins? Correct the

diagram given below.



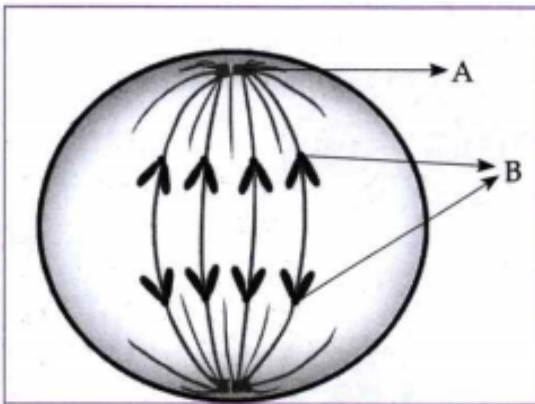
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165. Give examples of different proteins formed in various parts of our body from

amino acids:

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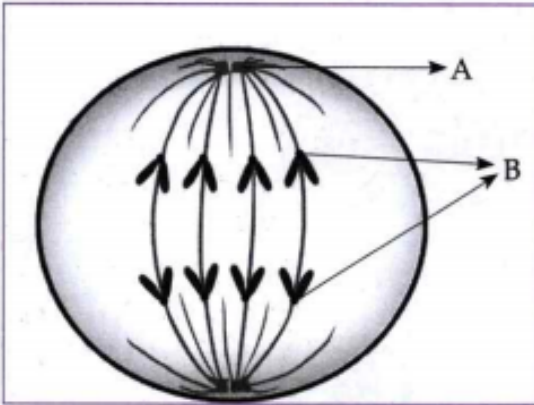
166. Observed the figure and answer the following questions.



Label the parts A and B

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167.

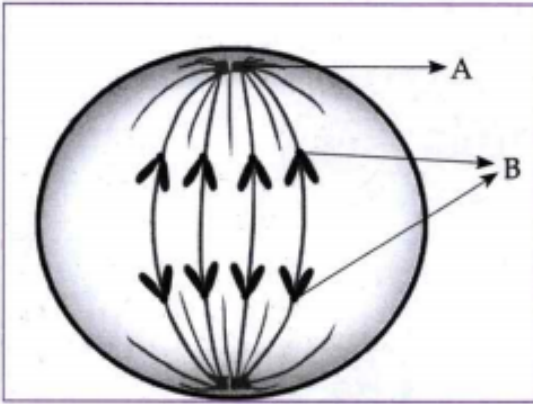


What phase comes before this phase?



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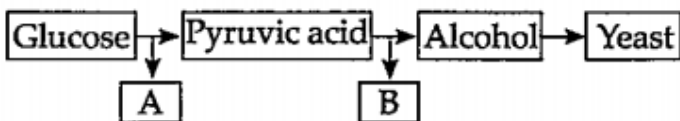
168.



Define the term Karyokinesis.

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169.

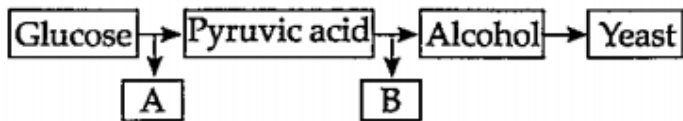


A B

Name the processes A and B.

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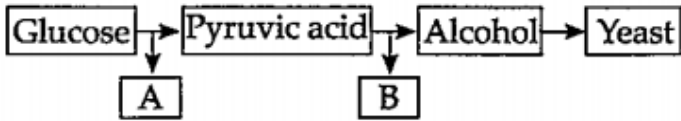
170.



What type of energy production is shown above?

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171.



Give one point of difference between yeast cells and muscle cells in relation to the above process.

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172. Answer in detail:

With the help of suitable diagrams explain the mitosis in detail.



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173. With the help of suitable diagram, explain the five stages of prophase I of meiosis.



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174. How all the life processes contribute to the growth and development of the body?



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175. Explain the Kreb's cycle with reaction.



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176. What are lipids? What is their role in our body?



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177. Distinguish between

Aerobic and Anaerobic respiration



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178. Explain with the help of a diagram - ATP is called as the energy currency of the cell. OR
Explain the importance of ATP in a cell with a diagram.



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179. State whether the following statements and True or False. Correct the false

statements:

Blood plasma contains 90% of water.

A. 0.7

B. 0.9

C. 0.65

D. 0.5

Answer:



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180. In which part of cell, electron transfer chain reaction occurs?

A. Cytoplasm

B. Mitochondria

C. Nucleus

D. Golgi body

Answer:



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181. Our muscles cells perform ____ type of respiration during exercise.



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182. Write the full form of: *NADH₂*



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183. State whether the following statements and True or False. Correct the false

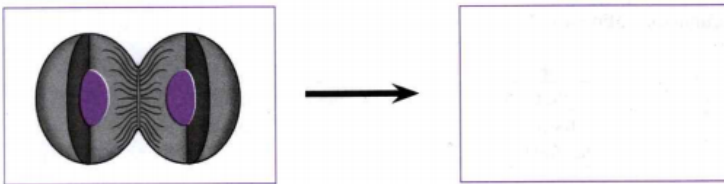
statements:

Vitamins B and C are water - soluble vitamins.

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184. Answer the following :

Complete the diagram



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185. Give scientific reasons: We feel tired when we do exercise.



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186. Distinguish between : Anaphase and Telophase.



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187. Answer the following :

Explain the Metaphase and Telophae of Mitosis.



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188. What are proteins? What is their role in our body?



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189. How are the various processes occurring in the human body controlled? In how many ways?



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190. Answer in detail:

Explain glycolysis and Krebs's cycle in detail.



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191. With the help of suitable diagram, explain the five stages of prophase I of meiosis.



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